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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/822,308	03/29/2001	Usman A.K. Sorathia	82,222	7684

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Naval Surface Warfare Center
Carderock Division Headquarters
David Taylor Model Basin
9500 MacArthur Boulevard
West Bethesda, MD 20817-5700

EXAMINER	
FEELY, MICHAEL J	

ART UNIT	PAPER NUMBER
1712	9

DATE MAILED: 09/16/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

1-D

Office Action Summary	Application No.	Applicant(s)	
	09/822,308	SORATHIA, USMAN A.K.	
	Examiner	Art Unit	
	Michael J Feely	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 September 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,5,7,9,11-14 and 16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2,5,7,9,11-14 and 16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 March 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. The following claims are pending in the instant application: 2, 5, 7, 9, 11-14, and 16.

Response to Amendment

2. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn. Applicants' changes to the claims in the previous amendment (paper #6) would have necessitated the finality of the Office action regardless of Applicants' arguments, set forth in paper #8. The following Office action will clarify and restate the rejections set forth in paper #7.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 2, 7, 9, 12-14, and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claims 2, 7, 9, 12-14, and 16 are dependent of cancelled claims. There is insufficient antecedent basis for the limitations in these claims.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 11 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al. (US Pat. No. 5,678,369) in view of Licht (US Pat. No. 4,467,577).

Regarding claims 11 and 5, Ishikawa et al. disclose a process of forming a composite structure (column 2, lines 27-47) including: formations of a barrier (column 15, lines 60-62: *non-woven fabric **104***) with a waterproofing cover skin (column 15, lines 60-62; column 28, lines 32-41: *backing material **102***); applying the barrier to an underlying substrate during formation of the composite structure (column 15, lines 60-66: *substrate is the surfacing material **101***); and attaching the barrier to the substrate by bonding before completing the fabrication of the composite structure (column 15, lines 62-66); said waterproofing cover skin being aluminum foil (column 15, lines 60-62; column 28, lines 32-41: *backing material **102***); and wherein the barrier is an intumescent mat (column 15, lines 66 through column 16, line 3: *non-woven fabric **104***) and the fire resisting agent is a phenolic resin (column 15, lines 60-62; column 16, lines 30-39; column 4, lines 59-64: *phenol foam-core material **103***).

It should be noted that the non-woven fabric material disclosed in the reference is selected from, "fibers selected from polyester type, nylon type, boron type, boron type, carbon type, alumina type, silicon carbon type, aramid type, glass fiber type and rock wool type," (column 15 line 1 through column 16, line 3). At least a portion of these materials are considered to be intumescent materials because fibers, such as nylon, glass, and aramid, are typically used in prepregs, wherein the fiber material is impregnated with a liquid resin. During impregnation, these materials would have inherently experienced swelling to some degree, rendering them intumescent. Furthermore, the non-woven fabric is described as "porous" by Ishikawa et al. (see column 2, line 63 through column 3, line 2), which would indicate its

intumescent property. The phenolic foam disclosed in the reference is also considered an intumescent material due to its porous nature.

Ishikawa et al. do not disclose the step of introducing the fire-resisting agent by infusion into the cover skin *after* formation of the barrier. This process step is supported by the Specification on page 3, lines 17-21: "Such procedures include formation 28 of the protective barrier layer from a barrier layer 30, such as barrier layers 14 or 14', into which the fire resisting agent 32 is introduced, either before adhesive bonding to the substrate or during its formation 34 to avoid use of adhesive bonding, before completing formation 26 of the composite structure as diagrammed in FIG 3." The referenced barrier layer 14 comprises a core barrier material and a waterproof skin. It should be noted that the fire-resisting agent is somehow being introduced "into" the aluminum foil by infusion. The claim language is not specific regarding where the infusion of fire-resisting agent is coming from. It could be coming from core-barrier side or the skin side of the core-barrier/skin interface.

In the Ishikawa et al. reference, the fire-resisting agent is the phenolic foam material. It is introduced "into" the waterproof skin (aluminum foil) when the phenolic foam material fills the pores of the intumescent non-woven fabric during fabrication of the composite structure (column 2, lines 54 through column 3, line 2; column 16, lines 30-39).

With reference to column 15, lines 60-66 and Figures 16(a) and 16(b), the composite of Ishikawa et al. is formed by laminating the following layers:

Surfacing material ***101***: Substrate
Adhesive ***105***: Bonding
Non-woven cloth ***104***: Intumescent barrier layer
Phenolic foam-core material ***103***: Fire-resisting agent
Non-woven cloth ***104***: Intumescent barrier layer
Adhesive ***105***: Bonding
Backing Material ***102***: Aluminum foil-waterproofing skin

The final composite structure produced by Ishikawa et al. reads on the final composite produced in the method of instant invention; however, the sequence of process steps in Ishikawa et al. is different from the sequence of process step set forth in the claimed invention – Ishikawa et al. do not disclose the step of introducing the fire-resisting agent by infusion into the cover skin *after* formation of the barrier.

It has been found that a process of making a laminated sheet by reversing the order of the process steps found in the prior art is an obvious variation of the prior art process – *Ex Parte Rubin*, 128 USPQ 440 (Bd. App. 1959). In *Ex Parte Rubin*, a prior art reference disclosing the process of making a laminated sheet wherein the base sheet is first coated with a metallic film and thereafter impregnated with a thermosetting material was held to render *prima facie* obvious claims directed to a process of making a laminated sheet by reversing the order of the prior art process steps.

In a previous response, Applicant argued that *Ex parte Rubin* relates only to double patenting rejections. MPEP § 2144.04 discloses:

> As discussed in MPEP § 2144, if the facts in a prior legal decision are sufficiently similar to those in an application under examination, the examiner my use the rationale used by the court. Examples directed to various common practices which the court has held normally require only ordinary skill in the art and hence are considered routine expedients are discussed below. If the applicant has demonstrated the criticality of a specific limitation, it would not be appropriate to rely solely on case law as the rationale to support an obviousness rejection.

; and MPEP § 2144.04 (IV-C), recites:

> ***C. Changes in Sequence of Adding Ingredients***
> *Ex parte Rubin*, 128 USPQ 440 (Bd. App. 1959) (Prior art reference disclose a process of making a laminated sheet wherein a base sheet is first coated with a metallic film and thereafter impregnated with a thermosetting material was held to render *prima facie* obvious claims directed to a process for making a laminated sheet by reversing the order of the prior art process steps.).

Furthermore, MPEP § 804 (II-B-1), reads:

> A double patenting rejection of the obvious-type is "analogous to [a failure to meet] the nonobviousness requirement of 35 U.S.C. 103" except that the patent principally underlying the double patenting rejection is not considered prior art. *In re Braithwaite*, 379 F.2d 594, 154 USPQ 29 (CCPA 1967). **Therefore, any analysis employed in an obvious-type double patenting rejection parallels the guidelines for analysis of a 35 U.S.C. 103 obviousness determination.** *In re Braat*, 937 F.2d 589, 19 USPQ3d 1289 (Fed. Cir. 1991); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985).

Because the analysis employed in an obvious-type double patenting rejection parallels the guidelines for analysis of a 35 U.S.C. 103 obviousness determination, the decision set forth in *Ex parte Rubin*, 128 USPQ 440, would also apply to analysis of a 35 U.S.C 103 obviousness determination in the instant application.

In addition, the pending claims include a limitation reciting, "and said bonding involving application of a silicone adhesive between the barrier and the substrate." Ishikawa et al. disclose, "As the adhesive **105**, a material is selected from the group consisting of types in which curing is effected by polymerization reacting such as cyano acrylate, epoxy; emulsion types such as rubber type, vinyl acetate type, EVA and the like," (column 16, lines 52-56); however, the reference does not explicitly disclose a silicone adhesive.

It should also be noted that Ishikawa et al. disclose, "The presence of a non-woven fabric is effective in that the core material which undergoes reaction is controlled spontaneously to pass the non-woven fabric. This is significant, because between the surfacing material or backing material and the core material, a thin adhesive layer of a high density to which is impregnated part of the core material is formed under such conditions and properties that permit the maximum adhesion to integrate the surfacing material, adhesive layer, core material, and the

backing material altogether. Furthermore, since the uneven surface of the un-woven fabric and pores are filled with the core material, the non-woven fabric exhibits an anchoring effect to intensify the adhesion between the surfacing material or the backing material and the core material, leading to an enhancement in the mechanical strength of the refractor/heat insulating panel," (column 2, lines 54 through column 3, line 2). This citation demonstrates that the adhesive provides bonding at the interface of the substrate and phenolic-intumescent material.

Licht discloses a process wherein a phenolic, fire-resistant, intumescent sheet (column 2, lines 24-29) is bonded to a substrate using adhesive (column 4, lines 12-19; Figure 2). Licht discloses, "Vulcanization of the restrained intumescent composite results in a strong bond being formed between the restraining layer and the intumescent sheet. Alternatively, certain cements and adhesives, which have adhesive-softening points above the temperature at which the intumescent material expands, can be satisfactorily utilized. Exemplary cements and adhesives include those made from *silicones* and epoxies," (column 2, line 67 through column 3, line 6). Licht demonstrates that silicones are capable of bonding these materials and that silicones are known bonding adhesives for phenolic-intumescent/solid substrate interfaces. Furthermore, silicones fall under the general description of appropriate adhesives set forth by Ishikawa et al.: "types in which curing is effected by polymerization reaction" and "emulsion types such as rubber type."

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have used a silicone adhesive to bond the phenolic/intumescent barrier to the substrate, as taught by Licht, in the invention of Ishikawa et al., because Licht teaches an intumescent composite comprising a fire-resistant, phenolic, intumescent sheet bonded to one or

more restraining layers using a silicone or an epoxy adhesive, resulting in a material for use in sealing penetrations (cables) through floors, partitions, and ceilings from smoke, fire, gas, and water passage.

Response to Arguments

8. Applicant's arguments filed September 5, 2002 have been fully considered but they are not persuasive.

9. Regarding the finality of the previous Office action, Applicants argue that pending version of claim 11 emphasizes certain patentable distinctions as compared to the earlier version of claim 11 under rejection in paper #3.

The earlier version recited: "The system for protection of a composite structure having a substrate and a barrier applied thereto during fabrication, including the steps of: introducing a fire resisting agent to the barrier; and attaching the barrier to the substrate before completing fabrication of the composite structure, wherein the step of introducing the fire resisting agent comprises: in-situ infusion of the agent into the barrier during said fabrication of the composite structure, further including the step of: applying a waterproofing cover skin to the barrier with the fire resisting agent infused therein before said attaching thereof to the substrate; wherein said attaching of the barrier is performed by bonding thereof to the substrate, wherein the waterproofing cover skin is aluminum foil and said bonding involves application of a silicone adhesive between the barrier and the substrate, and wherein the waterproofing cover skin is aluminum foil and said bonding involves application of a silicone adhesive between the barrier and the substrate."

The current version recites: "A process of forming a composite structure including: formations of a barrier with a waterproofing cover skin; applying the barrier to an underlying substrate during formation of the composite structure; introducing a fire resisting agent by infusion into the cover skin after formation of the barrier; and attaching the barrier to the substrate by bonding before completing the fabrication of the composite structure; said waterproofing cover skin being aluminum foil and said bonding involving application of a silicone adhesive between the barrier and the substrate."

The pending version of the claim has evolved to overcome objections rejections under 35 U.S.C. 112, second paragraph. All of the subject matter set forth in the pending claim is also present in the original version of claim 11. In fact, the pending version recites a broader process by omitting the "in-situ infusion" limitation.

With this said, the finality of the previous Office action has been withdrawn, and the current Office action has been written to clarify the pending rejections.

10. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "in-situ infusion of the fire resisting agent into the barrier layer before its attachment") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

11. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so

long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J Feely whose telephone number is 703-305-0268. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Dawson can be reached on 703-308-2340. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Michael J. Feely
September 13, 2002

Robert Dawson
Supervisory Patent Examiner
Technology Center 1700